Summary

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Ferdinand Kramer

University of Frankfurt a. Main Auditorium

Construction 1958.

The new auditorium adjoins the former university college and comprises 6 floors plus a basement where there have been installed a parking garage and the air-conditioning plant. The stairwell, the lifts, the seminar rooms, the offices, the cloakrooms and toilets are located in a junction building.

The basic building surface available measured 25×25 metres. The contractor planned 6 superimposed auditoriums with a capacity of 3000. The lectern on each floor is alternately on the door side or on the opposite side. This arrangement considerably reduced the height of the building, entailing a saving on volume.

The prerequisites taken into account in the programme are the following:

1. good acoustics
2. uniform lighting
3. satisfactory ventilation.

The fundamental question to be faced in this connection was the following: Are windows absolutely necessary?

Despite some resistance, we decided that the auditoriums would have no windows.

1. To shield the courtyards from external noise an insulating partition was erected in front of the supporting walls. The coffered ceiling, the ramp floor and the raised lectern yielded very good acoustic results. It is possible without the aid of a microphone for an ordinary conversational tone to be heard from any position.
2. The lighting question was resolved by neon tubes in the recesses of the ceiling. All seats receive dazzle-free illumination.
3. Stale air has a fatiguing effect. Natural ventilation by windows of such large halls during the short breaks is insufficient. Therefore the ventilation system was combined with the air-conditioning plant with good results.

The auditorium has been well received by both professors and students. For this reason we believe in this new conception. It is the only way to have constant and indispensable control over acoustics, lighting and ventilation.

Ferdinand Kramer
Walter Kolb

University of Frankfurt a. Main Student Residence

Built 1960/61.

This building comprises 6 stories and has 69 rooms plus a tutor's flat. The rooms measure 8.5 sq. metres each.

On each floor there is a washroom, a kitchenette, a cleaning room and a balcony. The ground floor comprises a common room opening on to the garden, a library and the reception room near the entrance. There have been installed in the basement a club, the records, a laundry with drying racks, the heating plant, a baggage room and a bicycle park.

The rental is DM 30,– per month plus the annual charges for cleaning, bed linen, light, heating and hot water coming to DM 45,–.

Ferdinand Kramer

University of Frankfurt a. Main Reactor

The construction of a reactor and of a radio-chemical institute with its rapid and continuous changes is such a new assignment that close collaboration among scientists, engineers and architects is indispensable.

Special attention had to be devoted to the question of protection against radiation, high temperatures, escaping gas, the preparation of waste water, the transport of isotopes and waste materials. Thus many details had to be improved and altered in the course of construction.

The laws having to do with radio-chemical security are still in their initial stages. Many factors have been integrated in this project even though exact requirements will not be precisely known until later. A board of experts established the security norms. In this way experience is being gathered that will be of benefit to future builders of such plants.

The technicians had to find new materials and new construction methods: automatic insulating doors, excessive precision, absolutely solid foundations that will not settle. It was necessary to guarantee that the reactor would have a gas tightness of 1% in spite of the ducts and conduits; other problems were the arrangement of decontamination rooms, the preparation of hydrogen, the biological shield, the creation of an electric circuit immune to power failures, the prevention of static depression in sealed rooms due to insulating doors, the question of ventilation of sealed rooms, etc. The architect's role is hard to define in a complex of factors like this. He must not, surely, allow the novelty of the project to tempt him into architectural flights of fancy, into expressing the sheer novelty of the project above all else. The architect must have experience and an ability to grasp the overall functioning of such a plant with all the manifold technical problems that can arise.

Construction

For static reasons and other functional considerations, the reactor was placed in the centre of a circular construction forming a cupola. A rectangular annex comprising the technical rooms adjoins the main building. The metal structural elements rest on a concrete caisson. The annex comprises on the ground floor the entrance hall and the hermetic antechamber along with the sanitary facilities. On the upper level the control room is connected with the reactor by a catwalk. On the basement level are located the waste water tanks, the cold rooms, the ventilation plant with the filters and the radioactive waste containers.

Walter Müller, Karl Oberle, Otto Freese

The Development of the University of Freiburg in Breisgau

After the overwhelming destruction of 1944 there remained only around 20% of the Ludwig-Albert University. The problem then was to maintain 500 years of tradition in a highly unstable time and, moreover, to attempt to integrate what was left within a reconstructed framework from which to tackle the challenges posed by modern times.

Thanks to the foresight of the University authorities, there was created in 1947 an agency charged with the planning and the reconstruction of the different buildings. Professor Linde was placed in charge of this team. An early recognition of the possibilities of renewal offered by the situation made possible the elaboration of a town plan and a university centre thoroughly modern in conception.

Since 1948 the economic development of West Germany has enabled an ever increasing number of students to enroll in the University.

In 1900 there were 1766 students, in 1938 2576, in 1950 3889 and in 1956 6082. This is why now once more it has been necessary to consider expanding facilities and to develop a complex that is in keeping with present-day requirements. Along these lines there were created Faculty I, the restaurant, Physics Institute II, the auditorium and the Hygiene Institute. The following illustrations show the Physics Institute and the restaurant. They express a modern conception, free of all ambiguity.

Walter Müller, Karl Oberle, Otto Freese

University of Freiburg in Breisgau Physics Institute II

Finished in 1961.

Since the commencement of the mechanical and industrial age universities, and more particularly, the faculties of sciences, have undergone a considerable development. Only part of the havoc wrought by the war at the University of Freiburg has been made good, and the new buildings are far from meeting the demands of the times.

In 1960 there was created an Educational Council charged with studying the development of all branches of higher education in Germany. Its recommendations and its planning concerning the above-mentioned university form the basis of a vast programme which envisages the extension of already buildings and the construction of new ones. The shortage of teachers is another weak point that has to be met by the creation of new chairs. All this has to be done without delay, for student enrollment is sharply increasing. The siting of the science institute close to the town is disadvantageous owing to the lack of available ground. This situation could be remedied by moving the penitentiary, but even so the problem would remain acute. The plot made available would have to accommodate the new science buildings and that for theoretical medicine. Space is so restricted that only a high-rise building will resolve the problem. This gives rise to further questions and to considerations of function: how to order the various sections meaningly on a vertical rather than on a horizontal plan. The upper floors will be reserved for rooms and courses with small circulation, whereas the auditoriums and other halls will be installed on the lower floors. It will also be necessary to plan utility annexes directly related to the main building and also special premises.

Despite the differences in the needs of each university, it will hardly be possible to set up a viable general plan for a high-rise building without doing so on a highly schematized basis. The interior fittings with the technical installations will also have to be brought within this new tendency if the required goals are to be attained. These common though multiple needs call for standardization of the various individual problems. These demands extend even to the buildings where the necessity of building quickly a large number of institutes is forcing a resort to prefabrication. These considerations go above and beyond the problems facing the University of Freiburg. They concern all the universities of the country. A special team is going to be organized to coordinate the planning and execution of such projects with a view to increased standardization.

The Physics Institute II, shown here, is a interesting example pointing toward the high-rise university. The auditoriums are situated on the ground floor. The ordinary classroom premises have been accommodated above. The workshop wing adjoining the auditoriums connects the basement where the proton accelerator is located. The central hall on the 1st floor is adorned by a sculpture of Prof. Uhlmann of Berlin.

A measuring room was installed in the basement as well. The total complex will in summer yield an effect of maximum harmony with the green zones of the Institute grounds.

Toivo Korhonen

Institute of Social Studies in Tampere

The new buildings of the school are situated on grounds surrounded by 7 to 10-storey buildings. This is why the architect decided by contrast to keep his elevations low. The plan reflects a clear and ample conception defining the 2 two-storey intersecting structures. One of these placed at a lower level houses the auditorium, the library and the restaurant. Crossing it is the second building with the smaller rooms.

The building is entered from the north where the two wings meet. First comes a lobby with a stairway leading up to the 1st floor. This floor is the centre of the school. Auditoriums and a concert hall have been installed here. To the west are the gymnasium, the restaurant and the club; to the east is the library.

All the premises on the upper floors possess dome skylights. The metallic panels of the concert hall are faced. The interior furnishings are simple but in good taste.

Minoru Ohta

The Kitami National College of Technology Kitami City, Hokaido, Japan

In the north of Japan, at Kitami, there has been created on a hilltop a small technical college. The east part is designed in such a way that each department can be enlarged if need be. The building is entered from the north-east in the angle of the two buildings forming the complex. The two-storey wing contains the auditoriums. To the left is the library, to the right the administration offices. The ground floor is arranged around two interior courtyards. The laboratories, the workshops and on the north-west a series of rooms for the students have been installed here. On the north side of the upper floor are situated the auditoriums and designing rooms, on the south the research laboratories. These rooms are connected by two stairways, one going from the lobby, the other leading up from the central hall beside the restaurant and the students' rooms. There is planned for the future a great hall, a gymnasium and extensions of the different departments.

The plan is on the modulor system. The detailing reveals a remarkable sobriety and is for this reason especially convincing.

Ove Arup + Partners

New Physics Building at the University of Oxford

Four stages have been planned with the following departments:

1. Research laboratories with electrostatic generator, laboratories, auditorium, common rooms, workshops and a residence flat.
2. Physics laboratories with library and auditorium.
3. Theoretical physics with offices for professors, assistants and students.
4. Great auditorium of the university seating 800.
5. Parking area for 160 cars and 550 bicycles.

The buildings are interconnected by terraces. The latter give access at different levels to the entrances as well as to the great auditorium.

A large number of special factors have dictated the siting and the architectural expression of the building. The rooms not requiring direct lighting have been located in the centre, whereas the laboratories are situated on the outside. The offices are situated around interior courtyards. A module of 5 feet (1.5 metres) constitutes the basis of the plan. The basement of the generator room and the tower are exceptions to this. Construction: solid concrete.

Ove Arup + Partners

Student Residence at Somerville College

Somerville College near Oxford is building a residence composed of two 3-storey blocks resting on one single foundation structure covering the entire built-over area. This level contains the common rooms as well as 5 storerooms, garages and cellars.

The first floor comprises facilities such as a music room, a common room, a refectory, etc.

The upper floors are reserved for bedrooms, kitchenette for every 7 to 10 rooms, bath, showers, WC and built-in cupboards.

The building has sliding windows running up to full room height.